Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Previously Presented) An active antenna system, the system comprising:

a differential voltage amplifier subassembly utilizing a passive lossless feedback circuit;

a subassembly having a pair of dipole probe elements connected to the differential voltage amplifier for producing an electric field sensing transduction mechanism for the reception of signals;

a scatter-plate subassembly that is tuned to direct received signals onto the pair of dipole probe elements subassembly;

a bias decoupling inductor to reduce noise contribution of the differential voltage amplifier;

wherein an inductance value of the decoupling inductor is selected such that an RF voltage peaking effect is obtained at a transistor input at a desired frequency.

2. (Previously Presented) The system of claim 1, wherein the passive lossless feedback circuit comprises a transformer connected to a Field Effect Transistor (FET) or a high impedance transistor, and wherein a gain of the differential voltage amplifier is scaled by turn-ratio of the transformer.

3. (Cancelled)

4. (Cancelled)

5. (Currently Amended) ~~A high gain, broadband, directive, active~~ An antenna comprising:

a ~~substantially linear, balanced, high-impedance,~~ differential voltage amplifier subassembly utilizing passive lossless feedback;

a subassembly having a pair of dipole elements connected to the differential voltage amplifier for producing an electric field sensing transduction mechanism; ~~and~~

a scatter-plate subassembly,

wherein the scatter-plate subassembly is tuned such that separate directive modes occur at desired areas of the RF frequency spectrum; ~~by distancing of the scatter-plate from driven elements, controlling effective inductance of the scatter-plate, or a combination of both, and~~

~~wherein the scatter-plate effective inductance is affected by material properties and geometry.~~

a bias decoupling inductor to reduce noise of the differential voltage amplifier;

wherein an inductance value of the decoupling inductor is selected such that an RF voltage peaking effect is obtained at a transistor input at a desired frequency.

6. (Previously Presented) The system of claim 1, wherein directivity is achieved by combining multiple subassemblies into fixed or steerable arrays; by combining a driven subassembly with a non-driven director element; or by combining a driven subassembly with any number of non-driven director elements and a scatter-plate/reflector assembly, or by a combination thereof.

7. (Currently Amended) ~~A high gain, broadband, directive, active~~ An antenna comprising:

a ~~substantially linear, balanced, high-impedance,~~ differential voltage amplifier subassembly utilizing passive lossless feedback ~~for gain scalability, high linearity, and elevated input impedance~~;

a subassembly having a pair of dipole elements connected to the differential voltage amplifier for producing an electric field sensing transduction mechanism; and

a scatter-plate subassembly, wherein for broadband TV reception, the scatter-plate dimensions and proximity to ~~antenna~~ the differential voltage amplifier and ~~probe~~ dipole elements are chosen such that the antenna exhibits a minimum front to back directive ratio (FIB) of about +8dB at High VHF and UHF frequencies; ~~and to achieve similar directive properties at lower frequencies if the scatter-plate geometry is tuned appropriately for such frequencies~~.

a bias decoupling inductor to reduce noise contribution of the differential voltage amplifier;

wherein an inductance value of the decoupling inductor is selected such that an RF voltage peaking effect is obtained at a transistor input at a desired frequency.

8. (Previously Presented) The system of claim 1, wherein in a lower half of a bandwidth of interest, the system is operational in a directive, capacitively-coupled loop mode in which fringing electric fields at ends of the pair of dipole probe elements capacitively couple to the scatter-plate and create a directive loop effect and in a upper half of the bandwidth of interest the system is operational in a reflector mode, and wherein the scatter-plate is tuned such that these separate directive modes occur at convenient areas of the RF frequency spectrum.

9. (Previously Presented) An antenna system for broadband directive reception, the antenna system, comprising:

a differential voltage amplifier subassembly with lossless feedback;

a dipole probe subassembly connected to the differential voltage amplifier for producing an electric field sensing transduction mechanism for the reception of signals;

a scatter-plate subassembly that is tuned to direct received signals onto the dipole probe subassembly;

the lossless feedback is provided by using a wire-wound transformer connected to a high impedance transistor;

the differential voltage amplifier gain is scaled by turn-ratio of the wire-wound transformer;

a bias decoupling inductor is used to reduce noise contribution of the differential voltage amplifier to the antenna system; and

an inductance value of the bias decoupling inductor is such that an RF voltage peaking effect is obtained at a transistor input at a desired frequency.

10. (Cancelled)

11. (Currently Amended) ~~A broadband directive~~ An antenna system comprising:

at least a ~~substantially linear, balanced, high impedance,~~ differential voltage amplifier subassembly with passive lossless feedback;

a dipole probe subassembly connected to the differential voltage amplifier for producing an electric field sensing transduction mechanism; ~~and~~

a scatter-plate subassembly, wherein the scatter-plate subassembly is tuned by ~~distancing of the scatter-plate from driven elements,~~ controlling effective inductance of the scatter-plate; ~~, or a combination of both, and wherein the scatter-plate effective inductance is affected by material properties and geometry.~~

a bias decoupling inductor to reduce noise of the differential voltage amplifier;

wherein an inductance value of the decoupling inductor is selected such that an RF voltage peaking effect is obtained at a transistor input at a desired frequency.

12. (Previously Presented) The system of claim 11, wherein directivity is achieved by combining multiple subassemblies into fixed or steerable arrays; by combining a driven subassembly with a non-driven director element; or by combining a driven subassembly with one or more non-driven director elements and a scatter-plate subassembly, or by a combination thereof.

13. (Previously Presented) The system of claim 11, the antenna configured to operate in a directive, capacitively-coupled loop mode in which fringing electric fields at ends of the antenna probe elements capacitively couple to the scatter-plate subassembly and create a directive loop effect and towards upper half of the bandwidth of interest the antenna operates in a reflector mode, and wherein the scatter-plate is tuned such that these separate directive modes occur at convenient areas of the RF frequency spectrum.

14. (Previously Presented) An active antenna system the system comprising:

means for amplifying received signals;

wherein the amplifying means is substantially linear, balanced, and high-impedance;

means for probing radio frequency signals,

wherein the probing means is connected to the amplifying means for the reception of radio frequency signals;

means for creating directivity with separate frequency-dependant, directive modes, the means for creating directivity is configured to direct the received radio frequency signals onto the means for probing radio frequency signals;

a decoupling inductor to reduce noise contribution of the amplifying means to the antenna, and wherein inductance value of the decoupling inductor is such that an RF voltage peaking effect is obtained at a transistor input at a desired frequency.

15. (Previously Presented) The system of claim 14, wherein the amplifying means comprises a differential voltage amplifier with lossless feedback, wherein the lossless feedback is provided via a transformer connected to a high impedance transistor, and wherein gain of the differential voltage amplifier is scaled by turn-ration of the transformer.

16. (Previously Presented) The system of claim 14, wherein the probing means is connected to the amplifying means to produce an electric field sensing transduction mechanism.

17. (Cancelled)

18. (Currently Amended) ~~A high gain, broadband, directive, active~~ An antenna comprising:

means for probing radio frequency signals,

means for amplifying signals received by the probing means,

wherein the amplifying means is substantially linear, balanced, and high-impedance; ~~and~~

means for creating directivity with separate frequency-dependant, directive modes,

wherein the means for creating directivity is tuned such that separate directive modes occur at desired areas of the RF frequency spectrum; ~~by distancing of the means for creating directivity from driven elements, controlling effective inductance of the means for creating directivity, or a combination of both, and~~

~~wherein the effective inductance of the means for creating directivity is affected by material properties and geometry.~~

means for noise reduction of the amplifying means;

wherein an inductance value of the means for noise reduction is selected such that an RF voltage peaking effect is obtained at a transistor input at a desired frequency.

19. (Previously Presented) An antenna for reception of signals, the antenna, comprising:

a substantially linear, balanced, high-impedance, differential voltage amplifier utilizing a lossless feedback circuit;

at least two dipole probe elements connected to the amplifier, wherein the combination of the amplifier and the dipole probe elements produce an electric field sensing transduction mechanism for the reception of signals, and wherein the antenna operates with a bi-directive reception pattern; and

a scatter-plate subassembly that is tuned to direct received signals onto said at least two dipole probe elements;

wherein, a bias decoupling inductor is used to reduce noise contribution of the amplifier to the antenna, and wherein an inductance value of the bias decoupling inductor is selected such that an RF voltage peaking effect is obtained at a transistor input at a desired frequency.

20. (Previously Presented) The active antenna of claim 19, wherein the scatter-plate is further configured to operate with a directive reception pattern over multiple octaves of Radio Frequency (RF) spectrum with separate frequency-dependant directive modes, and wherein the scatter-plate is tuned such that the separate directive modes occur at select areas of the RF frequency spectrum.

21. (Previously Presented) The active antenna of claim 19, wherein the lossless feedback circuit comprises a wire-wound transformer connected to a Field Effect Transistor (FET) or a high impedance transistor, and wherein gain of the differential voltage amplifier is scaled by turn-ratio of the wire-wound transformer.

22. (Cancelled)

23. (Cancelled)